

U.S.S.N. 10/072,766

Filed: February 8, 2002

AMENDMENT AND RESPONSE TO OFFICE ACTION**Amendment****In the Claims**

1. (previously amended) A method of treatment comprising

(a) penetrating into the endomural zone of an organ, organ component or tissue structure,

(b) cutting or removing tissue in the endomural zone to create a void, cavity, containment space or reservoir area, and

(c) delivering a therapeutic, prophylactic or diagnostic agent to the void, cavity, containment space or reservoir area in the endomural zone, wherein the agent is in a polymeric carrier material for local delivery of an effective amount of the therapeutic, prophylactic or diagnostic agent to the endomural zone,

wherein the polymeric material carrier is selected from the group consisting of porous matrices, hydrogels, organogels, colloidal suspensions, ~~microparticles and microcapsules,~~ ~~nanoparticles~~ and combinations thereof.

Claim 2. (canceled)

3. (previously presented) The method of claim 1 wherein the therapeutic, prophylactic or diagnostic agent is selected from the group consisting of drugs and cells.

Claim 4. (canceled)

Claim 5. (canceled).

6. (previously presented) The method of claim 3 wherein the drugs are selected from the group consisting of anti-infectives, antibiotics, antifungal, antihelminthic, antiparasitic agents, anticancer agents, anti-proliferative agents, anti-migratory agents, anti-inflammatory

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agents, metalloproteases, proteases, thrombolytic agents, fibrinolytic agents, steroids, hormones, vitamins, carbohydrates, lipids proteins, peptides and enzymes.

7. (previously presented) The method of claim 3 wherein the drugs are proliferative growth factors selected from the group consisting of platelet derived growth factor (PDGF), fibroblast growth factor (FGF), transforming growth factor (TGF), eye-derived growth factor (EDGF), epidermal growth factor (EGF), nerve growth factor (NGF), insulin-like growth factor (IGF), vascular endothelial growth factor (VEGF), Hepatocyte scatter factor, angiogenic growth factors, serum factors, collagen, laminin, tenascin, secreted protein acidic and rich in cysteine (SPARC), thrombospondin, fibronectin, vimentin and other matrix factors.
8. (withdrawn) The method of claim 3 wherein the cells are autogenous similar cells from adjacent normal zones of the same or different organs.
9. (withdrawn) The method of claim 3 wherein the cells are autogenous differing cells from adjacent normal zones of the same or different organs.
10. (previously presented; withdrawn) The method of claim 3 wherein the cells are stem cells or other progenitor cells.
11. (withdrawn) The method of claim 3 wherein the cells are explanted and expanded *in vitro* for implantation.
12. (previously presented; withdrawn) The method of claim 1 wherein the therapeutic agent is selected from the group consisting of genes, plasmids, episomes, viruses, and viroids.

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13. (previously presented) The method of claim 3 wherein the therapeutic agent is selected from the group consisting of heat shock proteins, stress response proteins, and inducers of heat shock or stress response proteins.

Claim 14. (canceled)

15. (previously amended) A device comprising
a hollow tubular member with an end means for creating a void, cavity, containment space or reservoir area in the endomural zone of an organ, organ component or tissue structure, by cutting or removal of tissue, wherein the means for creating the void, cavity, containment space or reservoir area is designed to cause minimal collateral damage to tissue surrounding a site where the void, cavity, containment space or reservoir is created,

and means for local delivery of a therapeutic, prophylactic or diagnostic agent into the void, cavity, containment space or reservoir area, wherein the agent is delivered in a polymeric carrier selected from the group consisting of porous matrices, hydrogels, organogels, colloidal suspensions, ~~microparticles and microcapsules~~, ~~nanoparticles~~ and combinations thereof,

the device further comprising means for indirect or direct guidance.

16. (previously presented) The device of claim 15 wherein the member is rigid and made of metal, polymer, or composite.

17. (previously presented) The device of claim 15 wherein the member is a flexible tubular tissue accessing device.

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18. (currently amended) The device of claim 15 wherein the device further comprises means for containment and local delivery of a the therapeutic, prophylactic or diagnostic agent attached to the member.

19. (currently amended) The device of claim 15 wherein the means to create a the void, cavity, containment space or reservoir comprises an expansile cutter attached to an end of the member.

20. (original) The device of claim 15 further comprising diagnostic or therapeutic sensors.

21. (original) The device of claim 15 further comprising projectile means to ballistically transfer particles through the ectoluminal or endoluminal zone for retention in the endomural zone.

22. (original) The device of claim 21 wherein the projectile means is selected from the group comprising mechanical acceleration, electrical transfer, spark explosion, and gas explosion.

23. (previously presented) The device of claim 15 further comprising means for direct guidance.

24. (previously presented) The device of claim 23 wherein the means for direct guidance is selected from the group consisting of fiber optic imaging systems, endoscopes, direct tip cameras, charge coupled device (CCD), Complimentary Metal Oxide Semiconductor (C-MOS) or other chip or electrical video systems, and ultrasound or global positioning systems (GPS).

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25. (previously amended) A kit comprising

a device comprising

a hollow tubular member with an end means for penetrating into the endomural zone of an organ, organ component or tissue structure,

a means for creating a void, cavity, containment space or reservoir area in the endomural zone, wherein the means for creating a void is designed to cause minimal collateral damage to tissue surrounding a site where a void is created, further comprising means for indirect or direct guidance, and

means for local delivery of therapeutic, prophylactic or diagnostic agents into the void, cavity, containment space or reservoir area, and

a void filling polymeric material or implant, wherein the void filling material or implant is in a form suitable for local delivery.

26. (withdrawn) The kit of claim 25 wherein the void filling material or implant can locally sense, store or telemeter physical, chemical or biological information.

27. (withdrawn) The kit of claim 25 comprising electroactive or electroconductive polymers which may be directly or externally activated via transcutaneous energy delivery to elicit positive or negative galvanotaxis.

28. (previously presented) The kit of claim 25 further comprising a therapeutic for induction of angiogenesis or myogenesis.

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29. (previously presented) The kit of claim 28 wherein the therapeutic is selected from the group of angiogenic growth factors, inflammatory angiogenic polymers or polymer constructs, and electroactive or other microinjurious or locally stimulatory polymers.

30. (withdrawn) The kit of claim 28 wherein the therapeutic comprises cells selected from the group consisting of endothelial cells, EC bone marrow precursor cells, other stems cells smooth muscle cells or precursors, combinations, neural cells or neural stem cells or combinations thereof.

31. (previously presented) The device of claim 15, wherein the device is suitable for nerve regeneration.

32. (previously presented) The kit of claim 25 comprising a bioactive polymer.

33. (previously presented) The kit of claim 25 further comprising stress response inducing agents or stress response proteins.

Claim 34. (canceled)

35. (previously amended) The method of claim 1, wherein the organ, organ component or tissue structure is penetrated percutaneously, surgically, or via endoluminal entry.

36. (previously presented) The method of claim 1 wherein the means for delivery of a therapeutic, prophylactic or diagnostic agent is a tubular device.

37. (previously presented) The method of claim 1, wherein the tubular device is selected from the group consisting of catheters, syringes and spray devices.